

What is claimed is:

1. A method of fabricating a capacitor for a semiconductor device; comprising the step of:

5 a) forming a sacrificial layer in the height of capacitor on the substrate so that a etch rate becomes lower if it's height becomes higher;

b) forming a trench by selectively eliminating the sacrifice layer in manner of wet etch process;

10 c) forming a bottom electrode in the trench;

d) eliminating the sacrificial layer;

e) forming a dielectric thin film on the bottom electrode; and

f) forming the top electrode on the dielectric thin film.

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2. The method of fabricating the capacitor as recited in claim 1, wherein the sacrificial layer is a TEOS layer.

3. The method of fabricating the capacitor as recited in
20 claim 2, wherein the sacrifice layer is formed in response to a RF power, an O₂ flow, and a spacing between the substrate and the shower head, and a upper portion of the sacrifice layer has a higher wet etching rate than a lower portion of the sacrifice layer does.

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4. The method of fabricating the capacitor as recited in claim 3, wherein the sacrifice layer is deposited in thickness

ranging from about 10000 Å to about 25000 Å.